

Virginia's Wildlife Resources

Chapter 11: Wildlife

Virginians are fortunate to share their home with a wide diversity of wildlife. Over 10,000 species of birds, mammals, fish, reptiles, amphibians, and different classes of invertebrates may be found from the depths of the Atlantic Ocean to Virginia's highest mountain, Mt. Rogers. Regardless of whether a species flies, swims, or crawls, it must have a healthy habitat to thrive. For a partial list of native and naturalized wildlife species in Virginia visit: <http://www.dgif.virginia.gov/wildlife/virginianativenaturalizedspecies.pdf>

The Importance of Habitats:

Habitat is more than the space an animal occupies. Within that space are food, water, and shelter, arranged so that the animal can travel with minimal exposure to predators, foul weather, and other dangers. Like a well-built home, a suitable habitat must serve all of these purposes throughout the year.

Over the past 400 years, Virginia's wildlife habitats have changed in many ways. Where once grew large expanses of old growth forests covering hundreds of square miles, today younger forests are divided by fields, roads, and houses. In the coastal plain, large wetlands and flood plains along the rivers which served as natural sponges have been filled or drained to extend fields for the growing of corn and other crops. Large and small reservoirs cover areas where rivers and streams once freely flowed.

With the change in habitat diversity and acreage available to wildlife comes a change in species mix and numbers. Gone from Virginia's wildlife landscape are both large and small species of wildlife including the Carolina parakeet, passenger pigeon and the woods buffalo. On the same land is a white-tailed deer herd numbering almost a million individuals, more robins than in colonial times, fewer warblers, and more sunfish and less trout.

New plant and animal species have been introduced both on land and in the waters of Virginia. Some have had a minor impact others have threatened to destroy natural systems. Invasive species such as the feral swine, <http://www.dgif.virginia.gov/wildlife/feral-hogs/> will eat almost anything including crops, reptiles and amphibians and the eggs of ground nesting birds. They will also destroy vernal pools, cause erosion and carry diseases that threaten both wild and domestic animals.

Wildlife Management in Virginia:

Throughout the Commonwealth wildlife is managed by balancing three considerations: the health of the species, the health of the ecosystem, and the needs of the people who share the space. The Virginia Department of Game and Inland Fisheries, www.dgif.virginia.gov, has the primary responsibility for managing wildlife species. Wildlife is a public resource and, as such, the state must ensure that populations remain healthy to be enjoyed by future generations. This means that citizens must obtain a proper permit or license to possess any wildlife species. Because the majority of wildlife live on private lands, public education and partnerships with individual land owners are extremely important to the overall health of all wildlife.

Management Tools Vary:

The relationship between man and wildlife is unique and as diverse as the number of species. Several factors influence which tools are used by individuals and the Department of Game & Inland Fisheries to manage wildlife. Although habitat management is a widely used tool for conserving wild animals, most of

the land in the Commonwealth is privately owned, and human uses sometimes come into direct conflict with best management practices.

Since wild animals often cross state and international boundaries, Virginia wildlife and fisheries biologists work with their counterparts throughout North America to maintain healthy populations and habitats. The management of many migratory species including ducks, songbirds, bats, sea turtles and anadromous fish, depend upon good communication among biologists from other states and countries to guarantee that habitat needs are met wherever the species may be during the year.

The term wildlife refers to all non-domesticated animal life and includes vertebrate and invertebrate taxonomic groups. All species of wildlife are important to the overall ecological health of natural systems. Most of Virginia's wildlife populations are healthy and are not intensively managed. One of the goals of wildlife management efforts is to keep species off the Threatened and Endangered Species List by effectively monitoring and managing their population and habitat. Virginia has a Wildlife Action Plan that outlines best management practices for those species in greatest conservation need at www.bewildvirginia.org

For management purposes, some groups of wildlife are legally divided into categories;

- **Game Species** – are those managed for recreation including fishing, hunting and trapping. These are the species that can be hunted or fished with a proper license, allowing individuals to take a specific limit or number of a species. Game species include trout, largemouth bass, deer, squirrel, turkey and a variety of other fish, birds, and mammals. Scientifically developed Management Plans for game species are another important tool used by biologists. The populations of game species are managed in such a way that our "use" is not detrimental to the species' survival. Game species are managed by Wildlife Biologists and Conservation Police Officers, who enforce state regulations limiting the number of animals that can be taken. Some species, such as the bluegill, reproduce in large numbers, fishing removes a portion of these fish and provides recreation for thousands of citizens. For some species, such as deer, the only effective management tool is an annual hunting season. Since much of Virginia is covered by a patchwork of fields and forests providing good habitat diversity, deer populations are increasing. Deer do well in suburban settings where they feed on ornamental bushes. Although there have been other methods tried to control the increasing deer herd here and across the United States, hunting remains the most efficient method.
- **Endangered, Threatened, or of Special Concern** wildlife - these species are closely watched and intensively managed in order to stabilize their populations. Each species and its habitat is managed through a recovery plan designed to increase reproduction success, improve habitat, and provide protection from natural and man-made threats. It is possible for an endangered species to thrive once threats have been removed and populations to recover enough for the species to be removed from the list. Recently recovered species include the brown pelican, bald eagle, peregrine falcon and Delmarva fox squirrel.

Habitat Loss is Primary Threat for all Wildlife:

Virginia's Endangered and Threatened Wildlife lists has over 100 species on it, a current list can be found at <http://www.dgif.virginia.gov/wildlife/virginiatescspecies.pdf> . For most species the lost or degradation of habitat is the primary reason it was listed. When a species' habitat is compromised and a suitable arrangement of food, water, shelter, and space is disturbed, the animal must adapt, move on, or die.

When continued destruction of a habitat occurs over time, species can become endangered or even extinct. Mussels are a case in point. Virginia has over 50 species of endangered or threatened mussels. The majority of these freshwater mussels are remnant populations native to the Tennessee River watershed. The lower stretches of the river was dammed, changing habitat conditions and creating river bottoms unsuitable for mussel habitation. As a result, the mussels were confined to headwater reaches

(which extend into Virginia). Many of these species are now extirpated in Tennessee. The Department of Game and Inland Fisheries operates an Aquatic Wildlife Conservation Center in Marion, where much of Virginia's mussel research is underway. The growing of native mussels for reintroduction into sites where they had disappeared due to chemical spills or other habitat issues is helping to restore populations. To learn more about this effort visit: <http://www.dgif.virginia.gov/awcc/freshwater-mussel-restoration/>

Other species can adapt if given time. Bald eagles initially became endangered due to overuse of the pesticide, DDT. The pesticide caused a thinning in their egg shells and reproduction was disrupted.

Additionally the eagle did not tolerate human activity near its nest site, resulting in a limited number of suitable nest sites. The lack of nesting territories away from human activity further stressed the population. With the banning of DDT and its subsequent decline in the eagles' food chain, along with protection of their nest sites, bald eagles made a comeback. Their status was down-listed from endangered to threatened in 1995. Finally, after decades on the Threatened and Endangered list the bald eagle was removed in 2007.



Eagles are building nests nearer to human activity and seem to be less skittish about sharing their space. They are adapting their behavior to man's presence.

Eagle Nest's and Fledglings by Year

Date	Year	Active Nests	Young Fledged
1977	1	31	18
1978	2	36	18
1979	3	34	20
1980	4	35	35
1981	5	39	40
1982	6	45	40
1983	7	52	51
1984	8	60	57
1985	9	65	84
1986	10	66	83

1987	11	73	107
1988	12	80	118
1989	13	92	88
1990	14	104	142
1991	15	110	153
1992	16	131	141
1993	17	149	172
1994	18	144	158
1995	19	154	223
1996	20	180	243
1997	21	214	321
1998	22	229	314
1999	23	230	326
2000	24	270	414
2001	25	312	465
2002	26	329	501
2003	27	371	454
2004	28	401	612

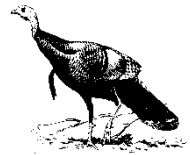
How much time a population needs to adapt is variable and is not always readily understood. If a species fails to adapt to changes in its habitat and is not capable of moving to another location, it will become extinct. Unfortunately, we don't have answers to the adaptation question and in some situations, adaptation is not an option. In any ecosystem there is an interdependent relationship between plant and animal species. Although we may not currently understand all the links provided by and between ecosystems, we know that all living organisms thrive with clean air and water and both healthy plants and animals are critical and are mutually dependent,

Humans also depend upon healthy, diverse ecosystems. Many small species of wildlife that go unnoticed are important to maintaining healthy systems.

- Insects are responsible for the pollination of much of the food we eat.
- Birds, bats, and other small animals feed on insects.
- Earthworms enrich soils so that plants can grow, and plants ex-change carbon dioxide for oxygen.

Each species has a "niche," or job, within an ecosystem and combined with niches of other species the entire system can remain healthy.

Through research and continued observation, wildlife managers are learning how to balance basic animal needs with the needs of a growing human population in Virginia. While many decisions about wildlife remain, expanding our knowledge will help ensure that the decisions made are good ones.



Wildlife Stewardship:

Virginia classrooms can help conserve wildlife and habitat. Some simple schoolyard projects include:

- Constructing and installing shelters for birds and mammals that require cavities for nesting or roosting. Information on proper placement, to minimize predation of the nestlings is available at www.dgif.virginia.gov/habitat.
- Improving public land by creating wildlife habitats on school grounds can greatly benefit species by providing much needed food, water, shelter, and travel corridors.
- Planting native species provides food sources for native pollinators which in turn feed other species further up the food web.
- Wildlife observations are not only fun but submitting observation data into the Wildlife Mapping program.

Additional Resources:

Web Sites:

- [Virginia Department of Game & Inland Fisheries](http://www.dgif.virginia.gov)
- [Project WILD](http://www.projectwild.org)
- [U.S. Fish and Wildlife Service](http://www.fishbase.org)
- [The Center for Conservation Biology](http://www.conervationbiology.org) at William and Mary



Other Resources:

- **Virginia Wildlife** magazine, a bi-monthly wildlife magazine sent to school libraries and available by subscription: <http://www.dgif.virginia.gov/virginia-wildlife/>
- **The North American Conservation Education Strategy: A Tool Kit for Achieving Excellence** The award-winning *North American Conservation Education Strategy* Toolkit includes guides to conducting field investigations, building observation skills, system thinking and more to help educators get outside investigating wildlife. All guides available for free download.
- **Wildlife Mapping**, enter wildlife observed on the Department of Game and Inland Species data base. Information about the program as well as a link to the entry page is available at <http://www.dgif.virginia.gov/wildlifemapping/>

Fundamental Learnings Related to Wildlife Resources

- Humans and wildlife have similar basic needs and depend upon food, water, shelter and space.
- The health and well-being of both humans and wildlife are dependent upon the quality of the natural environment.
- Wildlife has many values including; ecological, scientific, aesthetic, economic, recreational, social and intrinsic.
- Plants and animals in ecological systems live in a web of interdependence in which each species contributes to the functioning of the overall system.
- Living things tend to reproduce in numbers greater than their habitat can support. Various mortality factors, such as disease, predation, climatic conditions, pollution, accidents, and shortages of life's necessities will cause a percentage to die each year. Carrying capacity is determined by climatic, geological, biological and /or behavioral factors along with human activities.
- Wise resource and environmental management can improve the quality of life for wildlife and humans.
- Philosophies, objectives and practices of various types of resource management are sometimes incompatible with each other and therefore conflicts and tradeoffs can occur.
- Fish and wildlife can be conserved and restored through science based management which considers the needs of humans as well as those of fish and wildlife.
- Wildlife conservation and management techniques include information and education programs, regulations, inventory, damage control, habitat management, stocking, artificial propagation, transplanting and direct manipulation of wildlife populations.
- Species differ in their ability to adapt:
 - Fish and wildlife are adapted to their environment in ways that enable them to compete and survive.
 - The more adaptable a species is, the more likely it is to thrive
 - Most species that are endangered or threatened in North America became so as a result of natural or human-caused changes in their habitat and their inability to adapt or adjust to such changes.
- Everyone impacts fish and wildlife and their habitats and as human populations grow, impacts on natural resources increase.